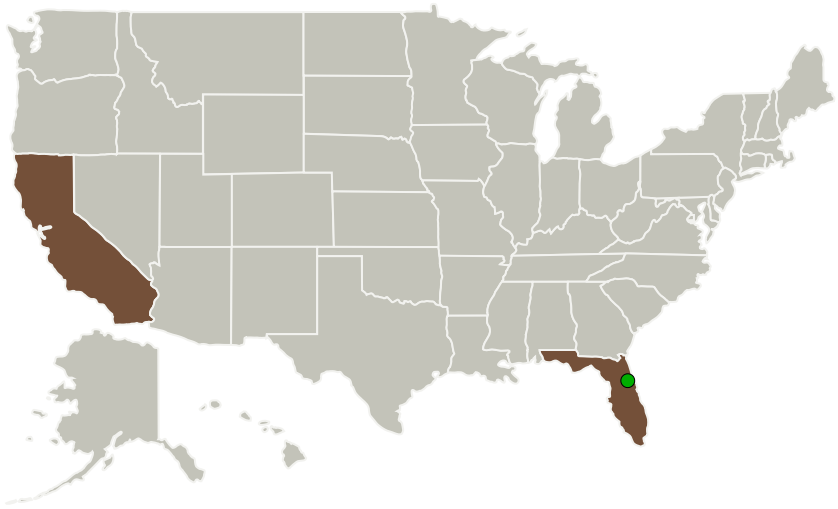
A High-Payload Fraction, Pump-Fed, 2-Stage Nano Launch Vehicle, Phase I

Completed Technology Project (2012 - 2012)

Project Introduction

Ventions proposes the development of a pump-fed, 2-stage nano launch vehicle for low-cost on-demand placement of cube and nano-satellites into LEO. The proposed vehicle uses high T/W and high Isp pump-fed engines that operate at high chamber pressures without the weight penalty of high pressure tanks, thereby realizing payload fractions in the 1-2% range. Ventions has already completed several component-level demonstrations in the area, and is proposing additional development of the stage separation mechanisms, payload fairing and main engine gimbal as part of the Phase I effort.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Ventions, LLC	Lead Organization	Industry	San Francisco, California
Kennedy Space Center(KSC)	Supporting Organization	NASA Center	Kennedy Space Center, Florida

Primary U.S. Work Locations	
California	Florida

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Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137821)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Ventions, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

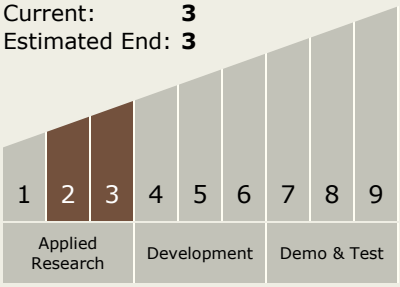
Carlos Torrez

Principal Investigator:

Adam London

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.1 Chemical Space Propulsion
    - TX01.1.3 Cryogenic

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System